

ABSTRACT

A method for high-speed scheduling and arbitration of events for computing and networking is disclosed. The method includes the software and hardware implementation of a unique data structure, known as a pile, for scheduling and arbitration of events. According to the method, events are stored in loosely sorted order in piles, with the next event to be processed residing in the root node of the pile. The pipelining of the insertion and removal of events from the piles allows for simultaneous event removal and next event calculation. The method's inherent parallelisms thus allow for the automatic rescheduling of removed events for re-execution at a future time, also known as event swapping. The method executes in $O(1)$ time.